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ABSTRACT

An assessment was made of the vocational/technical training needs of the four-county Middle Georgia area served by Middle Georgia Technical Institute. Information was obtained through surveys of area businesses and former students of the school, as well as demographic and economic studies. Some of the findings were the following: (1) the population of the area is expected to grow by about 20,000 by the year 2000; (2) the economy continues to be fairly strong and to support a strong labor market in the area; (3) new businesses and industries are locating to the area; (4) former students of Middle Georgia Tech and area employers are satisfied with the quality of training provided by the school, although some concerns remain, such as lack of modern equipment and failure of the curriculum to accommodate new technological developments; (5) graduates of the school averaged about $1,000 in income above the statewide average; (6) new standards formulated by the state will necessitate increased personnel and physical space at the school; (7) economic development activities remain important; and (8) since the school is near capacity, additional faculty and space are necessary to meet the training needs of local businesses and industry. Alternatives for expansion were proposed. (The document includes detailed analysis of needs and strengths in various program areas.) (KC)

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MIDDLE GEORGIA TECHNICAL INSTITUTE

Area Vocational/Technical Training Needs Assessment

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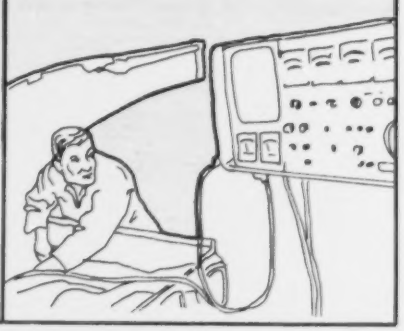

Prepared by the Middle Georgia APDC

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Middle Georgia Technical Institute

Area Vocational/Technical Training Needs Assessment

Prepared by
The Middle Georgia Area Planning and Development Commission

January 1989

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I. Introduction

Recent decades have seen sweeping changes in the structure of the American economy. The demand for unskilled labor has diminished, while the vast majority of new jobs created in the past ten years require some degree of technical expertise, even at the entry level. Although more Americans are attending college now than at any time in our history, less than one in five still completes a full four years and receives a degree. At the same time, most high school graduates are finding that their diplomas cannot guarantee them a secure job or adequate wages. For these reasons, vocational and technical skill education has become more important than ever before.

In addition to vocational and technical skill training, other more non-traditional adult educational services are becoming increasingly important to area citizens. Adult literacy training, G.E.D. preparation and testing, and remedial skills training (particularly in Math and English) are in great demand. Continuing education for those persons already employed in technical fields assumes greater importance as the pace of technological change accelerates and additional training becomes necessary to remain current.

In the Middle Georgia area, technical skill training is especially important. The Warner Robins Air Force Base employees over 16,000 civilian workers, most in technically skilled positions. The many private industries which support the local defense effort employ thousands more. The need of other local

businesses and industries for skilled workers also continues to increase steadily as the local economy expands and the area population grows.

Because the timely and efficient provision of vocational and technical training is so important to the Middle Georgia area, the Middle Georgia Technical Institute in Warner Robins, Georgia has produced this Vocational/Technical training needs assessment in cooperation with the Middle Georgia Area Planning and Development Commission. The intent of this study is to define future training needs in the Middle Georgia Tech service area and anticipate the resources necessary to meet those needs.

The assessment process consisted of four separately identifiable steps. First, an information base was established. The data collected includes demographic and economic information for the four-county service area, profiles of the student population for each program area, and information from area employers concerning anticipated business patterns and employment needs.

The second step involved the quantification of future training needs through analysis of the information previously compiled. Determinations were made concerning population growth, business expansion, educational attainment, and labor force characteristics in order to develop a specific assessment of need in each program area. The need assessments reflect the changes anticipated in the local economy during the next ten to fifteen years.

The third step consisted of determining the ability of Middle Georgia Tech to meet the anticipated future need with currently existing facilities and human resources. Percent utilization of the physical plant, individual program capacities, and instructional options were each evaluated in order to identify un-met future need.

THe final step involved the development of a program of recommended actions to insure future Vocational/Technical training needs in the Middle Georgia area will be met. Alternatives were evaluated on the basis of their suitability to anticipated future conditions and final recommendations were made concerning specific program areas as well as the overall direction which the Middle Georgia Technical Institute should take in the coming decades.

The methodology utilized in the production of this study should allow Middle Georgia Tech to anticipate as accurately as possible the Vocational/Technical education needs of the Middle Georgia area and to provide a timely and effective response, much to the benefit of the area business community and the citizens of Middle Georgia.

II. Executive Summary

The analysis of demographic factors, economic trends, student and employer surveys, and the existing physical and human resources of the Institute give strong indication of the need to expand current facilities and program operations.

The population of the four-county Middle Georgia Tech service area is forecasted to grow from the present 133,603 persons to 159,843 persons by the year 2000. This represents an addition of 26,000 persons, over 15,000 of whom will be between the ages of 20 and 34. The Middle Georgia area as a whole is also expected to grow significantly in the coming decade. The Middle Georgia Planning Area, which includes Bibb, Jones, Crawford, Monroe, and Twiggs counties, as well as Houston and Peach, is forecasted to grow from it's current population of over 315,000 persons to 350,000 persons by the year 2000. Since Middle Georgia Tech also serves students from many of these counties, this growth will generate additional demand for adult educational opportunity, as well as for goods and services in the local economy.

The economic health of the Middle Georgia Tech service area remains good, although family and per capita incomes still tend to be lower than State and national averages. Houston County boasts the area's largest and most diverse economy, although Peach County is developing rapidly. Economic growth in Dooly and Pulaski counties remains moderate and uneven. Area unemployment tends to be at or below State averages with Houston and Peach

counties having the strongest labor markets. Unemployment rates in Dooly and Pulaski counties are significantly higher and show substantial variation from year to year.

New businesses and industries continue to locate to the area in substantial numbers. The Middle Georgia Planning Area is estimated to have added over 10,000 jobs since 1980. Growth in employment at the Warner Robins Air Base and related aerospace industries in Houston County has been significant. These industries are anticipated to continue expansion of operations and employment in the coming decade. Other manufacturing and service industries are also expected to show strong growth.

Educational attainment in the four-county area remains slightly below State averages. While over 44 percent of graduating high school students go on to college, nearly 30 percent seek vocational or technical training, join the military, or remain unemployed. An additional 25 percent go directly into the work force, generally for unskilled, low wage jobs.

Surveys of former students and of area businesses indicate general satisfaction with the quality of training received at Middle Georgia Tech. However, many concerns remain. The lack of modern equipment in many program areas and the failure of the curriculum to adequately accommodate new technological developments in a timely fashion are primary concerns. Employers also express a strong desire for the provision of greater practical work experience in numerous program areas. Students express a desire for increased individual attention from

instructors and a greater emphasis on specific job related skills.

Because of the present and anticipated circumstances in the Middle Georgia Tech service area, the Institute has an excellent opportunity to provide vocational and technical training, and other adult educational services, to the rapidly developing region. Both population and economic growth are expected to remain strong. New employment in technical fields is anticipated to increase and the need to retrain workers from present occupations will be high. Demand for skilled employees in all areas of the manufacturing and service sectors will continue to grow. Student demand for vocational and technical training in traditional program areas can be expected to increase by 50 percent in the year 2000.

In addition to demand increases based on population and economic growth, new standards required of the Institute by the State will significantly impact Middle Georgia Tech's ability to provide adequate levels of service. The Institutional and General Standards which will be applied beginning in calendar year 1989 require the integration of new core courses into the curriculum of each program area. These requirements will necessitate additional manpower and physical space.

Despite strong economic growth, economic development activities like the Quick Start Program will remain important, especially in Dooly and Pulaski counties. The Middle Georgia area is in an excellent position to take advantage of fundamental

changes currently occurring in the national economy. With proper efforts on the part of Middle Georgia Tech and other area organizations concerned with economic development, the four-county area will greatly benefit from the increasing technological sophistication of American business and industry.

Non-traditional adult educational services will also experience increased demand. Adult illiteracy is alarmingly high in the Middle Georgia area. Economic growth will necessitate greater efforts at remedial training, especially in Math and English. A greater emphasis will have to be placed on minimum educational attainment, such as the G.E.D. program. Employees in existing businesses and industries will experience the need for increased proficiency in computer and other business related skills.

Middle Georgia Tech is currently operating at or near capacity in all program areas. Lists of students waiting for admission to the Institute exceed one-third of current enrollment. New program standards applied by the State will significantly impact the Institute's ability to provide adequate service with the resources presently available. Classroom space suitable for diverse activities is in critical shortage. The Institute's physical and human resources are becoming inadequate to meet present demand and will fall far short of future requirements.

Additional faculty and physical space are necessary if the Institute is to be able to meet the training needs of the service

area population and local business and industry. Un-met demand in current programs, as well as opportunities for the provision of necessary services in many non-traditional areas, will necessitate the expansion or relocation of the present facility as soon as possible.

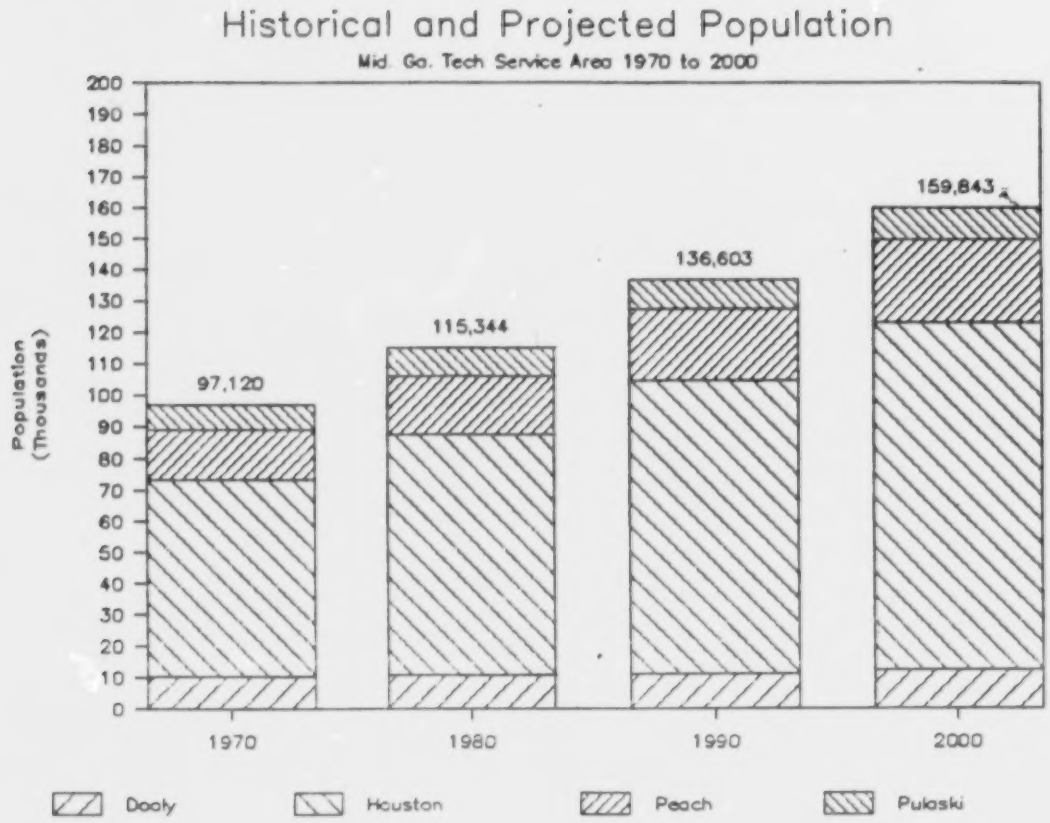
III. The Middle Georgia Tech Service Area

The official Middle Georgia Tech service area consists of Dooly, Houston, Peach, and Pulaski counties. While Middle Georgia Tech draws students from many Middle Georgia counties and other areas of the State, these are the counties for which the school is primarily tasked with the provision of vocational and technical education services.

The counties in Middle Georgia Tech's service area display a wide range of demographic characteristics with substantial variations in population, personal income, educational attainment, and economic development. Houston County is the area's most urbanized and economically developed county as well as the most populous. It is one of the most rapidly developing counties in Georgia outside of the Atlanta area and is home to the Warner Robins Air Force Base as well as a number of significant industries. Peach County is the area's second most populous with roughly a quarter of the population of Houston County. Peach County is also experiencing rapid growth, especially in northern areas of the County where substantial residential and commercial development is underway. Dooly and Pulaski counties remain primarily rural with moderate population growth and sporadic economic development.

A. Population

The Middle Georgia Area Planning and Development Commission (APDC) estimates the 1988 population of the four county service



area to be 133,511 persons. This figure reflects a growth of 17,987 persons over the 1980 Census total of 115,529 persons, and represents an eight-year increase of 15.6 percent. The majority of this increase is represented by Houston County which is estimated to have grown by 14,139 persons since 1980 to a total of 90,689 persons, or an increase of 18.5 percent. In the same period, Peach County grew by 15.6 percent to 22,042 persons; Dooly County grew by 5.5 percent to 11,394 persons; and Pulaski County grew by 5.1 percent to 9,386 persons.

The State of Georgia Office of Planning and Budget forecasts a 1990 population of 136,603 persons for the Middle Georgia Tech service area, and a year 2000 population of 159,843 persons, an

TABLE 1

POPULATION BY AGE GROUPS - MIDDLE GEORGIA TECH SERVICE AREA 1970 TO 2000

Middle Georgia Tech Service Area
Population by Age - 1970

Age Group	Total	White Male	White Female	Black Male	Black Female
<5	9188	3055	2939	1598	1596
5 to 9	11162	3768	3713	1843	1838
10 to 14	11701	4149	3881	1860	1811
15 to 19	9687	3093	2977	1637	1980
20 to 24	9039	3366	3067	1188	1418
25 to 29	6494	2440	2461	763	830
30 to 34	6034	2170	2534	598	732
35 to 39	6138	2534	2464	505	635
40 to 44	5501	2204	2252	430	615
45 to 49	5603	2281	2300	453	569
50 to 54	4741	1998	1672	476	595
55 to 59	3577	1288	1319	413	557
60 to 64	2701	872	978	384	467
65 to 69	2084	582	776	288	438
70 to 74	1472	372	572	199	329
75 to 79	1007	223	440	136	208
80 to 84	595	138	256	73	128
=>85	396	65	172	61	98
Total	97120	34598	34773	12905	14844

SOURCE: United States Census Bureau

Middle Georgia Tech Service Area
Population by Age - 1980

Age Group	Total	White Male	White Female	Black Male	Black Female
<5	9515	3021	2789	1821	1884
5 to 9	9868	3312	3074	1752	1730
10 to 14	10363	3437	3246	1851	1829
15 to 19	12351	4076	3914	2135	2206
20 to 24	11013	3829	3585	1686	1913
25 to 29	9379	3278	3206	1339	1556
30 to 34	8794	3341	3199	1043	1211
35 to 39	7210	2676	2856	787	891
40 to 44	6821	2658	2764	617	782
45 to 49	6542	2733	2561	560	688
50 to 54	5592	2286	2228	457	621
55 to 59	5236	2042	2201	412	581
60 to 64	4129	1605	1560	396	568
65 to 69	3376	1014	1351	424	587
70 to 74	2185	626	911	239	409
75 to 79	1498	352	687	159	300
80 to 84	851	189	409	86	167
=>85	621	103	305	60	153
Total	115344	40578	40846	13844	18076

SOURCE: United States Census Bureau

Middle Georgia Tech Service Area
Population by Age - 1990

Age Group	Total	White Male	White Female	Black Male	Black Female
<5	10944	3449	3192	2111	2192
5 to 9	11375	3781	3507	2048	2039
10 to 14	11893	3923	3702	2140	2128
15 to 19	14798	4948	4753	2526	2571
20 to 24	13291	4657	4355	2010	2269
25 to 29	10846	3744	3659	1576	1867
30 to 34	10186	3814	3653	1227	1492
35 to 39	8333	3064	3262	930	1077
40 to 44	7888	3038	3167	740	943
45 to 49	7546	3125	2921	666	834
50 to 54	6398	2608	2539	528	723
55 to 59	5989	2328	2509	479	673
60 to 64	4676	1821	1758	453	644
65 to 69	4974	1537	2063	595	779
70 to 74	3199	947	1369	325	558
75 to 79	2134	519	1006	210	399
80 to 84	1229	278	610	117	224
=>85	904	150	459	86	209
Total	136603	47731	48484	18767	21621

SOURCE: Georgia Office of Planning & Budget

Middle Georgia Tech Service Area
Population by Age - 2000

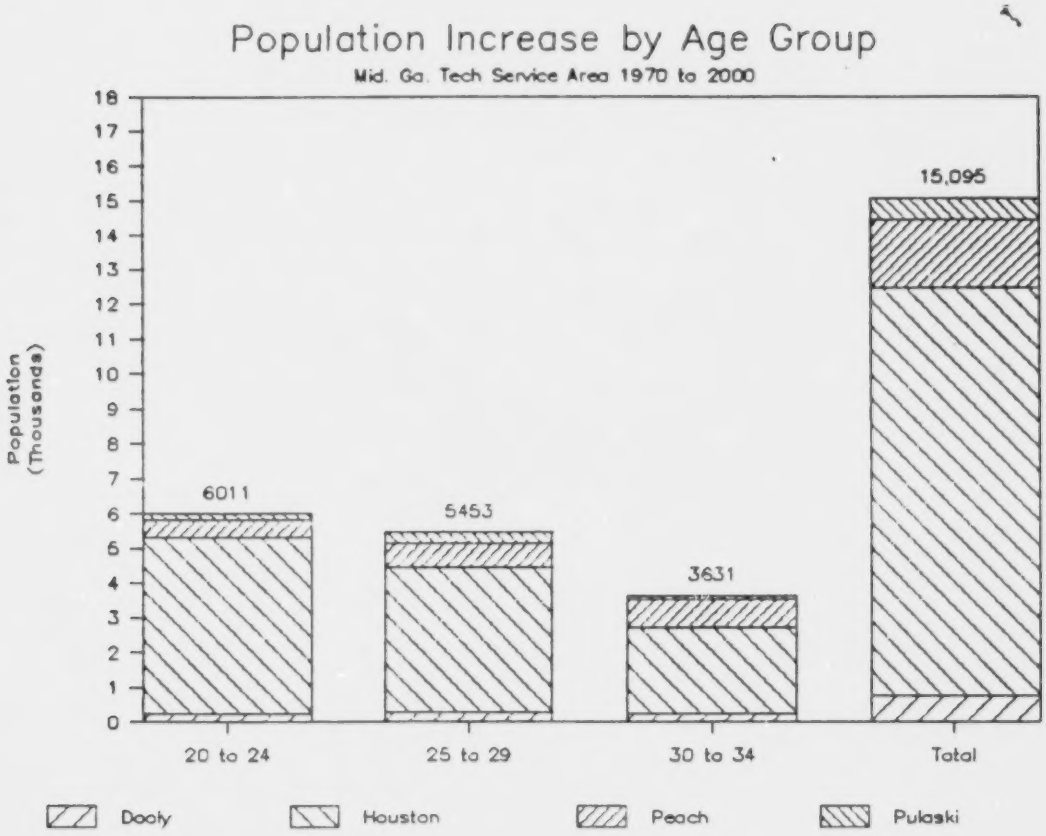
Age Group	Total	White Male	White Female	Black Male	Black Female
<5	11085	3117	2822	2528	2618
5 to 9	12394	3785	3494	2571	2544
10 to 14	14482	4249	4265	3082	2886
15 to 19	15698	4579	4513	3279	3327
20 to 24	14492	4641	4228	2676	2947
25 to 29	10125	3207	2963	1763	2190
30 to 34	9929	3215	3318	1497	1899
35 to 39	11028	3859	3972	1549	1648
40 to 44	10921	4150	3619	1285	1867
45 to 49	11039	4139	3781	1382	1737
50 to 54	9612	3905	3260	1051	1396
55 to 59	7585	2728	2986	833	1038
60 to 64	5926	2131	2122	734	939
65 to 69	5479	1720	1991	775	993
70 to 74	3644	956	1686	334	668
75 to 79	3001	760	1578	226	437
80 to 84	1868	510	926	203	229
=>85	1535	257	825	163	290
Total	159843	51908	52349	25933	29653

SOURCE: Georgia Office of Planning & Bud

increase of 38.6 percent over the 1980 population. Although much of this increase is represented by growth in the elderly and near elderly population, the ages 15 to 34 will also experience significant growth (see Table 1). The age group 15 to 19 is forecasted to grow by 27.1 percent while the age group 20 to 24 is expected to grow by 31.6 percent. The age groups 25 to 29 and 30 to 34 are anticipated to grow 8.0 percent and 12.9 percent, respectively. These changes will bring an additional 19,000 persons between the ages of 15 and 34 into the Middle Georgia Tech service area by the year 2000.

In addition to it's official service area, Middle Georgia Tech also draws students from other Middle Georgia counties. Students from Bibb, Crawford, and Bleckley counties represent a moderate but significant percentage of the school's enrollment. Population growth in these areas, as well as in the Mid-State region as a whole, is expected to remain strong well into the next century. Middle Georgia APDC forecasts for the Middle Georgia Planning Area, which includes Houston and Peach counties as well as Bibb, Crawford, Jones, Monroe, and Twiggs, anticipate a population in excess 350,000 persons for the year 2000. As the Macon/Warner Robins urban area continues to expand, the southern fringe counties of Macon, Dooly, Pulaski, Bleckley, and Twiggs will also begin to receive moderate residential and commercial development associated with the area's expansion. By the year 2000, the counties which are currently represented in the Middle Georgia Tech student body are forecasted to have a total

population of over 550,000 persons.

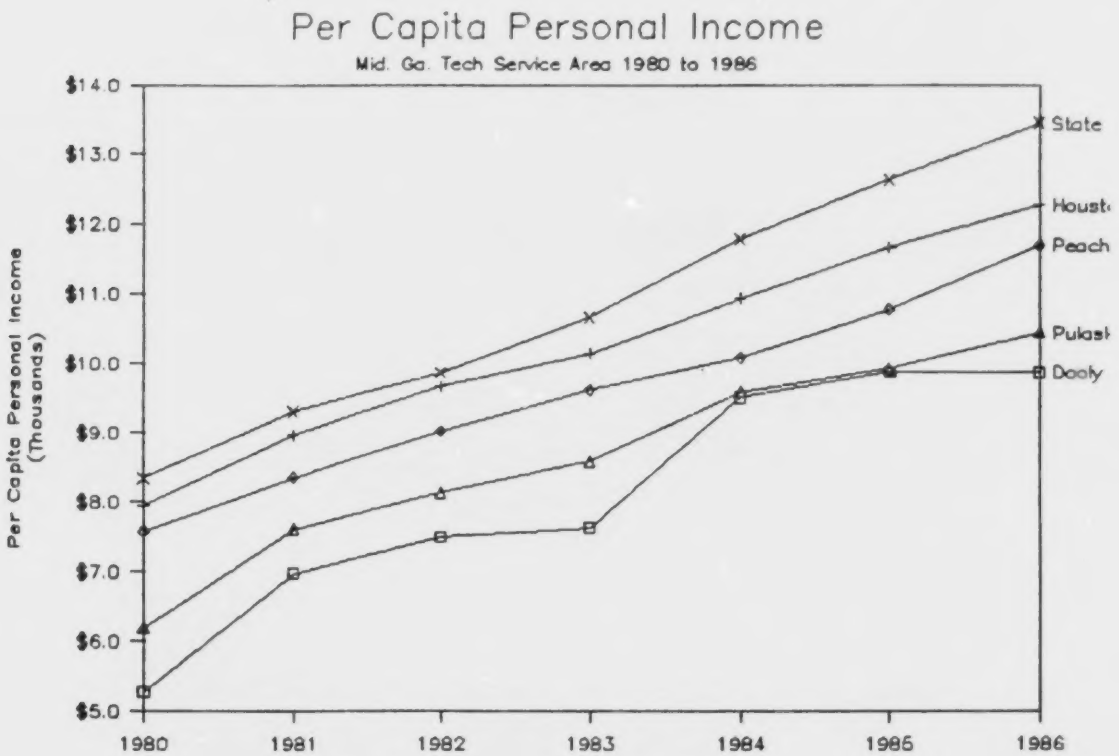


B. Economy

Income and employment figures for the Middle Georgia Tech service area show substantial differences in the relative economic strength of the four counties. Data for Houston County generally show a stable and healthy economy with incomes and employment approaching State averages. Peach County shows consistent economic improvement, but at a rate which finds per capita incomes falling farther behind the State average while unemployment remains above State averages. Dooly and Pulaski

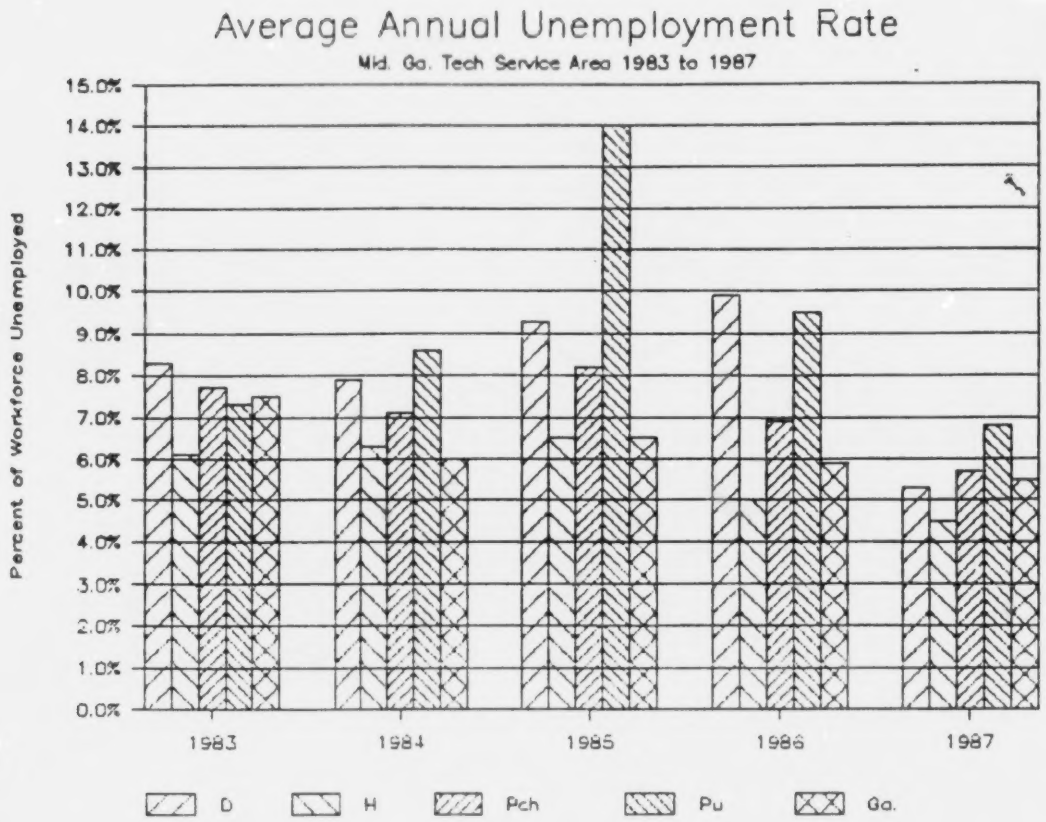
Counties show only very moderate economic growth with personal incomes still lagging well behind State averages and levels of unemployment generally much higher than the State average.

Results from the 1980 Census show Houston County as the only area county to exceed the State median family income with $20,633, significantly higher than the State's $17,414. Dooly, Peach, and Pulaski counties all had median family incomes well below that of the State with $12,342, $15,295, and $14,400, respectively. Dooly, Peach, and Pulaski counties also were well above the State average in percent of families living below poverty level (1979 Poverty Level = $7,412 annual income for family of four). In the Middle Georgia Tech service area, only



Houston County fared better than the State average, with 11.8 percent of all families living below the poverty level compared to 17.7 percent for the State.

Data provided by the Department of Commerce, Bureau of the Census, Office of Economic Forecasting show that since 1980, per capita personal incomes have risen steadily in the four Middle Georgia Tech counties. However, these increases have failed to keep pace with rising State averages and in 1986 the four county Middle Georgia Tech service area represented a smaller percentage of State average per capita income than at any time during the seven year period. While the average per capita income in Georgia had risen to $13,451 in 1986, Houston County's had risen to only $12,282, or 91.3 percent of the State average, and Dooly County reported a distant $9,881, only 73.4 percent of the State average. Although the percent increase in per capita income during the six year period was actually higher in Dooly and Pulaski counties than in the State as a whole, slower income growth in Peach and Houston counties reduced the 1986 four-county average to its smallest percentage of the State average since 1980. While Census Bureau estimates are not available for 1987, Middle Georgia APDC estimates do not anticipate significant change in per capita incomes for the Middle Georgia Tech service area, and the disparity between State averages and local per capita incomes is likely to slowly increase as the majority of high income employment continues to locate in the Metropolitan Atlanta area.



Average annual unemployment rates for the Middle Georgia Tech service area show substantial variation from year to year. Information provided by the Georgia Department of Labor, Labor Information Systems for the years 1983 to 1987 indicate annual unemployment rate averages generally at or below State averages for Houston County and rates generally higher for Dooly, Peach, and Pulaski counties. Houston County averaged 5.7 percent annual unemployment for the five year period, 90.4 percent of the State average of 6.3 percent. Peach County's average annual unemployment for the period was 7.1 percent, or 113. 4 percent of the State average. Dooly and Pulaski counties experienced rates of 8.1 and 9.2 percent respectively, 129.6 and 147.1 percent of

the State average rate over the five year period.

Annual variation of the average unemployment rates was least significant in Houston County, which experienced a high of 6.5 percent in 1985 and a low of 4.5 percent in 1987. In Peach County, the high annual rate was 8.2 percent in 1985 and the low was 5.7 percent in 1987. For Dooly County, the high was 9.9 percent in 1986 and the low was 5.3 percent in 1987. Pulaski County experienced the greatest variation in annual unemployment rate averages with a high of 14 percent in 1985 and a low of 6.8 percent in 1987.

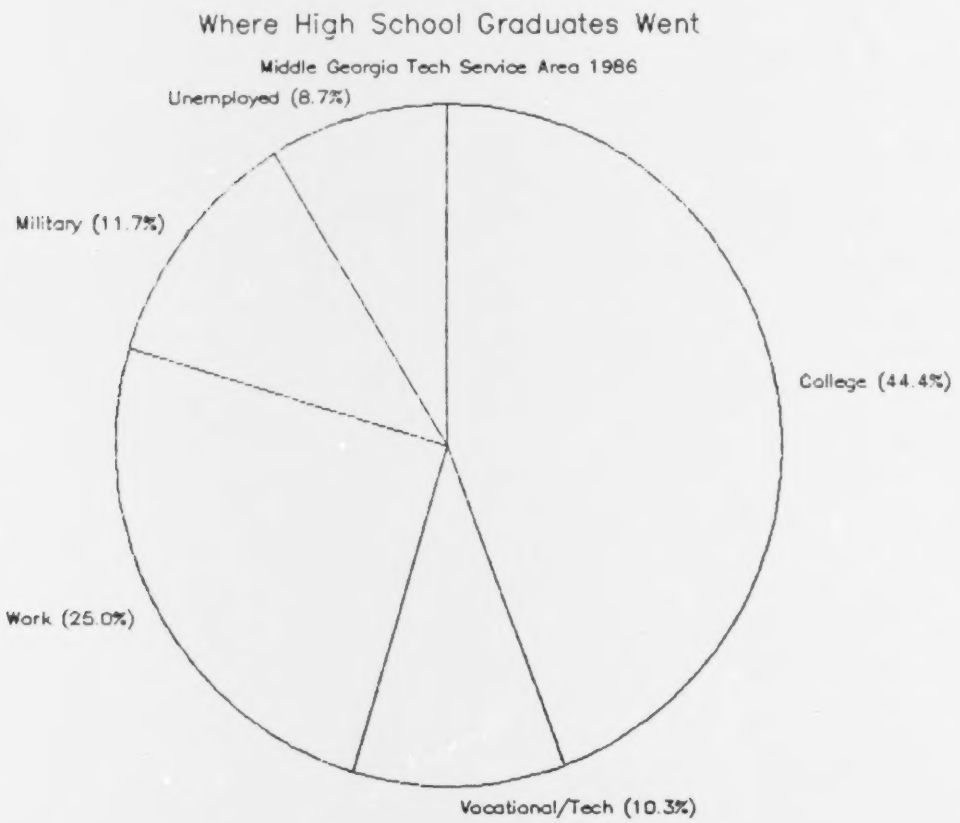
C. Education

The 1980 Census shows most of the Middle Georgia Tech service area lagging behind State averages in educational attainment. While 56.4 percent of all State residents 25 years or older were high school graduates in 1979, of the Middle Georgia Tech counties only Houston County fared better than the State as a whole, with 68.8 percent. Dooly County was badly behind with only 33.9 percent of persons 25 years or older being high school graduates. Peach and Pulaski counties fared slightly better than Dooly with 51 and 45 percent high school graduates, respectively.

College education in the four-county Middle Georgia Tech service area was also reported at levels below State averages. In 1979, 14.6 percent of all State residents 25 years and older had completed four or more years of college. Peach and Houston counties approached this level with 14.4 and 13.2 percent,

respectively. Pulaski and Dooly counties were well below the State level, with only 8.6 and 7.9 percent of county residents 25 and older being college graduates.

The percent of county residents 25 years and older with one full year or more of college attendance was also generally below State levels. Only Houston County, with 48.1 percent, exceeded the State's 40.3 percent. Pulaski County reported only 21.3 percent, while Peach and Dooly counties reported only 20.6 and 17.5 percent, respectively. The higher attendance percentage in Houston County is likely related to the convenience of educational opportunity available through the Warner Robins Air Base Residence Center and the presence of large numbers of



military and civilian personnel employed by the air base who are competitively promoted, based in part on educational attainment.

The State of Georgia Department of Education figures for 1986 high school graduates show students from the Middle Georgia Tech service area going to the military and on to vocational/technical training in numbers greater than State averages. Graduating high school students in the Middle Georgia Tech service area also reported greater unemployment following graduation than students in the State as a whole, while the percentages from the 1986 graduating class going to college were nearly the same.

The four-county average of students continuing on to college after high school graduation was 41.56 percent, nearly identical to the State average of 41.07 percent. Peach County had the highest percentage of the Middle Georgia Tech service area counties with 51.3 percent of graduating students going on to college, followed by Houston County with 42.8 percent, Pulaski County with 33.3 percent, and Dooly County with 21.1 percent.

Of the 1986 graduates who directly entered the job market in the four-county service area, 34.6 percent reported themselves as unemployed. This compares to 21.9 percent for the State as a whole. In Peach County, where 26 graduating students sought work, only seven were employed at the time the statistics were reported. For the four-county Middle Georgia Tech service area as a whole, 8.1 percent of all graduating high school students reported themselves as unemployed at the time of the survey,

significantly higher than the 5.4 percent reported for the State.

Higher numbers of Middle Georgia Tech service area graduates also joined the military. Just slightly less than 11 percent of all area high school graduates continued on to military service following graduation. The average for the State was slightly less than 7 percent. In Peach County, nearly one quarter of the graduating class of 1986 joined the military. In Dooly County, one out of every seven graduates chose military service. Percentages for Houston and Pulaski counties were 8.1 and 11.1, respectively.

Graduating students in the Middle Georgia Tech service area also chose Vocational/Technical education at a higher rate than the State as a whole. While 7.9 percent of all Georgia high school graduates attended a vocational or technical course of instruction following graduation, 9.6 percent of graduates in the four-county area continued on to additional vocational or technical training. In Peach and Pulaski counties, one out of every eight high school graduates attended a Vocational/Technical school. In Houston County one student for every eleven graduates attended, and in Dooly County one of every sixteen graduates went on to vocational or technical training.

Adult illiteracy continues to be a significant problem for the Middle Georgia area. The Georgia Department of Human Resources reports that as many as 20 percent of the adults in the Macon/Warner Robins Metropolitan Statistical Area are functionally illiterate, with as many as one-third reading no

better than a fifth grade level. Both high school drop outs and graduates show a high level of poor reading proficiency. In addition, a large percentage of the area's adult population display poor Math skills and substandard technical proficiency in English.

IV. Middle Georgia Tech Student Profile

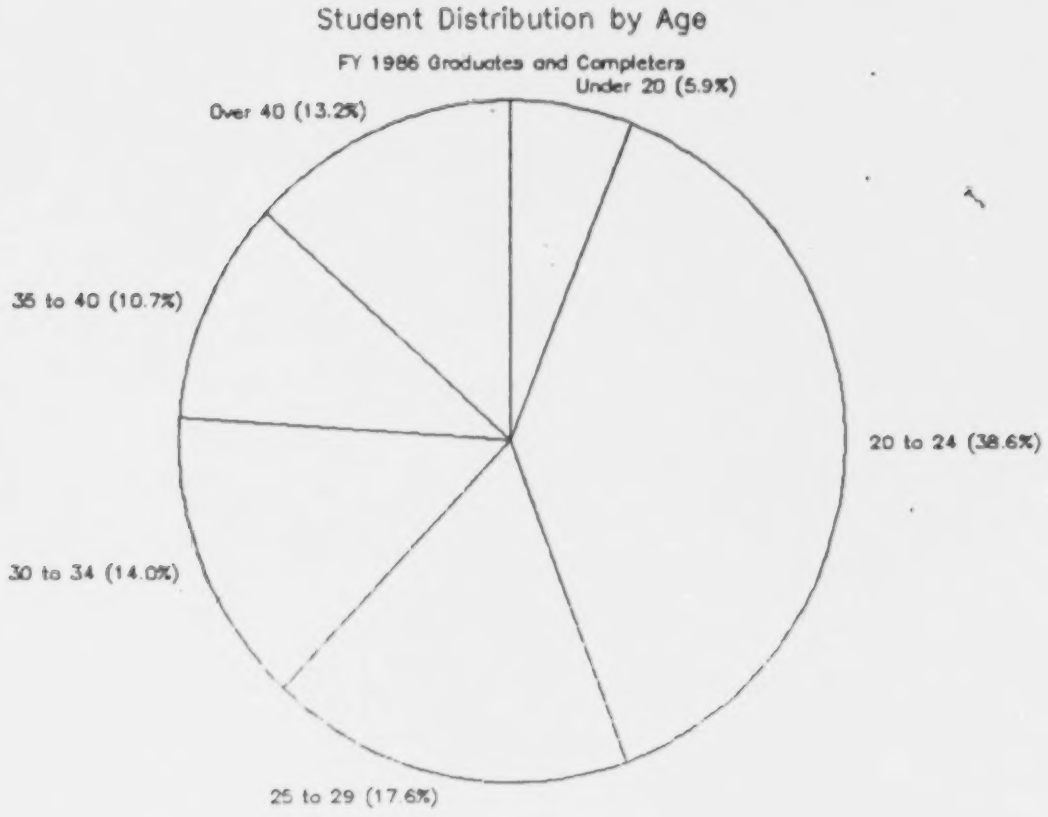
Students attending the Middle Georgia Technical Institute represent a wide range of ages and geographic origins, as well as racial and ethnic groups. While the majority of students fall between the ages of 20 and 34, many are in their teens or over sixty. Also, in the past three years, students from 23 Georgia counties have attended Middle Georgia Tech. Middle Georgia Tech students also experience varying degrees of success and satisfaction in their employment following graduation, although their impressions of the quality of the Vocational/Technical training they receive are generally favorable.

A. Age Distribution

Statistics compiled by the Middle Georgia Technical Institute (see Student and Employer Evaluation of Occupational Training) for fiscal year 1986 graduates and students otherwise ending their enrollment show the age group 20 to 24 years to be the largest, with 38.6 percent of all students. Second largest was the 25 to 29 age group with 17.6 percent, closely followed by the 30 to 34 age group with 14 percent. These three age groups comprised over 70 percent of total student enrollment.

The under 20 age group represented the smallest percentage of students with 5.9 percent, while the over 40 group represented 13.2 percent of all students.

On a program by program basis, the age breakdown of enrolled students was generally consistent with the overall percentages.



However, the more technical programs, such as aircraft sheet metal and electronics technology, attracted less younger and less older students than average for the Institute overall. In aircraft sheet metal, 80.2 percent of all students were between the ages of 20 and 34, whereas in the electronic technology program 77.8 percent of all students were between the ages of 20 and 34.

B. Geographical Distribution

Analysis of the G.E.M. reports for the years 1986 through 1988 shows Middle Georgia Tech students reporting 23 different counties of residence (see Table 2). The majority of students

reported Houston County as their county of residence, with 77.58 percent of all students enrolled during the three year period. Peach County reported the second highest total with 8.35 percent. Pulaski and Bleckley counties followed with 3.93 and 2.35 percent, respectively. Dooly County represented 1.58 percent of total enrollment during the period.

Table 2
Geographical Distribution of Students - 1986 to 1988

County	1986	1987	1988	Total	Percent of Total
Bibb	8	13	16	37	2.02%
Bleckley	17	14	12	43	2.35%
Bullock	1	0	0	1	0.05%
Chatam	0	0	1	1	0.05%
Crawford	2	3	2	7	0.38%
Crisp	5	0	2	7	0.38%
Dodge	6	5	4	15	0.82%
Dooly	8	8	13	29	1.58%
Gordon	1	1	1	3	0.16%
Houston	507	452	463	1422	77.58%
Jenkins	1	0	0	1	0.05%
Laurens	1	0	0	1	0.05%
Macon	5	6	7	18	0.98%
Peach	43	55	55	153	8.35%
Pulaski	23	20	29	72	3.93%
Putnam	1	1	0	2	0.11%
Richmond	1	0	0	1	0.05%
Taliaferro	1	1	0	2	0.11%
Taylor	2	3	5	10	0.55%
Turner	0	1	0	1	0.05%
Twiggs	0	0	1	1	0.05%
Wilcox	1	1	0	2	0.11%
Wilkinson	3	1	0	4	0.22%

SOURCE: Middle Georgia Technical Institute,
Georgia Evaluation Model Reports

The four-county Middle Georgia Tech service area of Dooly, Houston, Peach, and Pulaski counties represented 91.44 percent of total enrollment for the period 1986 to 1988. On a year by year basis, the percentages represented by each county remained generally consistent with only the percent of the total represented by Houston County falling slightly from 79.7 percent in 1986. Students from Bibb County represented only 1.2 percent of total enrollment in 1986, but the percentage had risen to 2.6 in 1988.

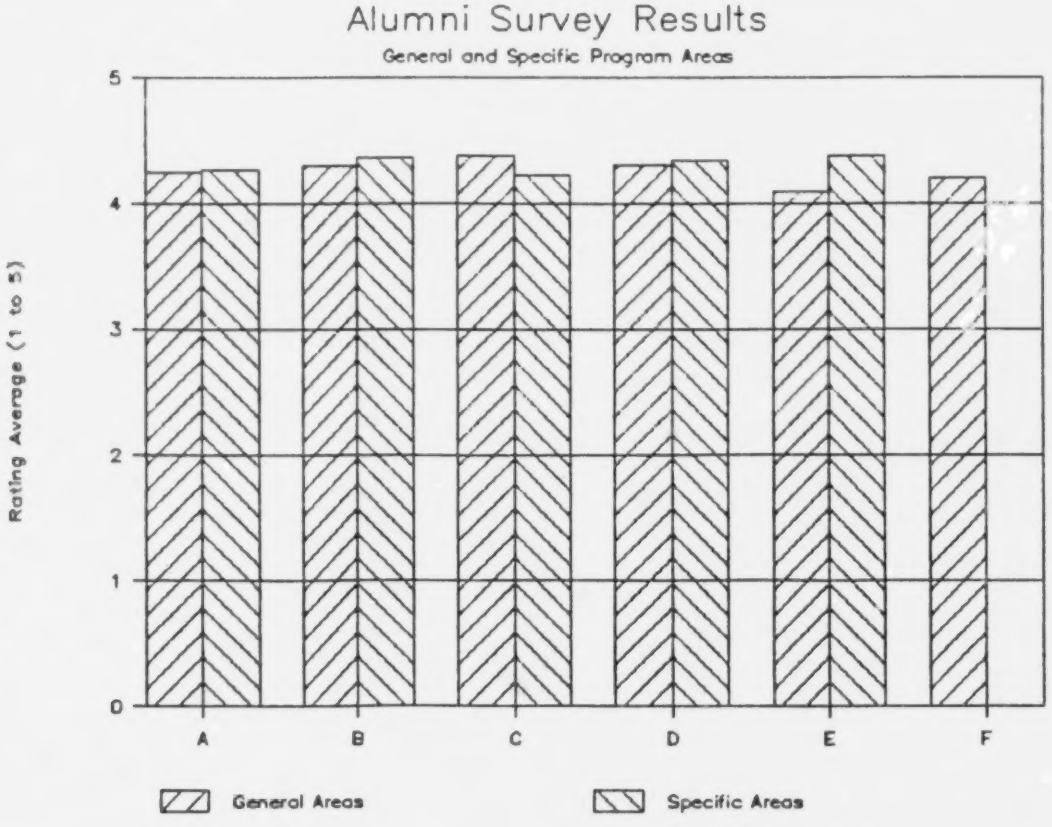
C. Alumni Interview Results

As part of the Georgia Evaluation Model process, former Middle Georgia Tech students were surveyed to determine their perceptions of the quality of the school's instructional programs. The survey instrument was also utilized to solicit suggestions for improving or enhancing current program curriculum and developing additional program areas.

The survey initially determined the graduation and employment status of each former student. Students were then asked to evaluate both general program attributes and specific program areas in order to ascertain the student's perception of the overall quality of instruction received. Each student was asked to assign a value between one (low) and five (high) to each general and specific program area. General program areas included; methods of instruction, program content, facilities and equipment, guidance services, placement services, and cooperative

work experience. Specific program areas analyzed were; the relationship of course work to job requirements, the contemporary nature of the technical instruction, the applicability of tools and equipment used to job requirements, instructional organization, and instructional time efficiency.

Overall, student responses to survey questions were very positive (see Table 3). The mean student response for all general program areas was 4.26 out of a possible 5.00. The average student response for specific program areas was 4.31. The clerk typist program received the highest overall ratings with 4.63 in general areas and 4.7 in specific areas, while the graphic arts program received the lowest ratings with 3.91 in general program



areas and 4.03 in specific areas.

The responses to individual program areas were generally consistent, with little variation between the averages for each individual category. In general program areas, placement services were judged by students to be the weakest, with a mean of 4.09 for all programs. Facilities and equipment were judged to be the strongest, with an average of 4.37. In specific program areas, instructional tools and equipment were judged to be the weakest, with a mean of 4.22, while use of instructional time was judged to be the strongest, with an average of 4.38.

Student suggestions for improving present programs cover a wide range of areas, but many recommendations were consistently repeated by students from the different programs. The most common recommendations involved the updating and improvement of equipment. Many students recommended that more computer equipment and training be provided. A greater availability of training and equipment in specialized areas of machining and electronics were suggested. Students also recommended that the school make a greater effort to insure that the available equipment reflects recent advances in technology and business practices.

The other most common suggestions were the provision of greater practical, or "hands on" experience. The use of internship requirements in this role was often suggested. Students also expressed concern that insufficient individual attention was afforded to students and it was suggested that additional instructors be recruited to adequately meet student

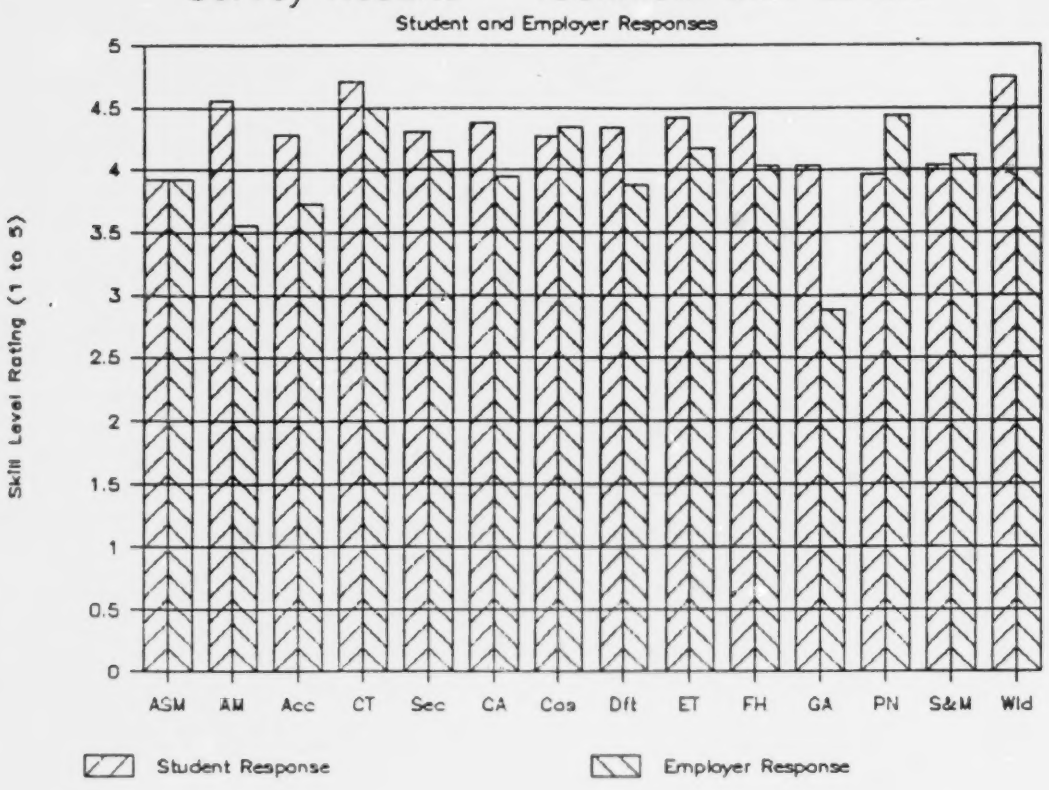
needs.

Of the 163 alumni surveyed, 65.6 percent were employed in their field, 10.4 percent were employed out of field, and 23.9 percent were unemployed. It is significant to note that although almost a quarter of the students contacted were unemployed at the time of the survey, the results still reflect very favorably on Middle Georgia Tech, and 100 percent of the alumni responding indicated they would recommend Middle Georgia Tech to other students.

The Student and Employer Evaluation of Occupational Training prepared by the State Board of Technical and Adult Education in fiscal year 1986, which also surveyed student attitudes and perceptions, reflects a strong standing for Middle Georgia Tech in many program areas when compared on a State-wide basis. However, the report also shows significant weaknesses in some areas in relation State-wide responses.

Generally, the report indicated that the other Vocational/Technical schools in the State were doing a slightly better job of preparing students for actual employment responsibilities. State-wide, 42 percent of students responding felt that their education had done an excellent job of preparing them for the demands of their employment, while only 34 percent of Middle Georgia Tech students reported the same perception.

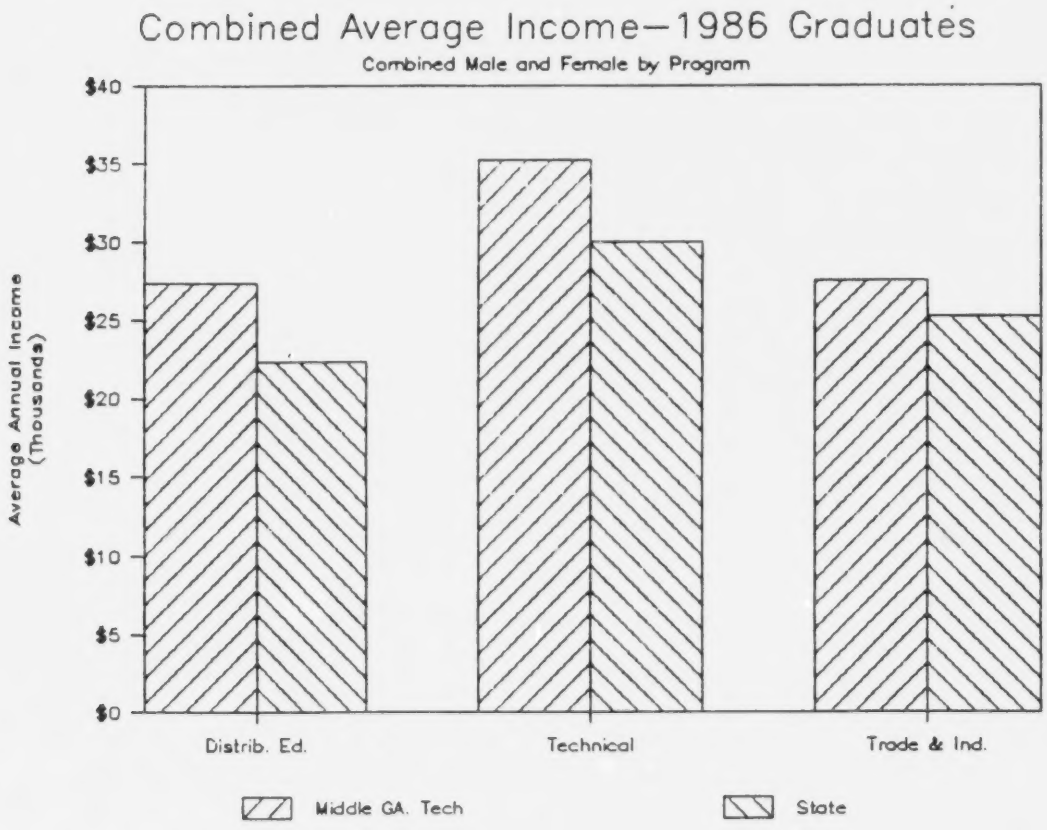
However, Middle Georgia Tech students did indicate perceptions of the value of instructional content and equipment similar to their counterparts State-wide. Fifty-four percent of



Middle Georgia Tech students felt instructional content was up-to-date, as compared with 48 percent State-wide. Forty-two percent of Middle Georgia Tech students felt tools and equipment utilized in training were the same as those found on the job, while 44 percent of students State-wide indicated the same perception.

Salaries reported by the students surveyed indicate that the Middle Georgia Tech graduates receive substantially higher pay than State-wide averages, although most of the difference is attributable to the earnings of male graduates. In the general technical program areas, male Middle Georgia Tech graduates earned an average of $5,000 a year more than the State mean,

while female graduates earned only $300 a year more. In trade and industrial program areas, male graduates reported annual incomes $1,300 above the State-wide average, while the incomes for female Middle Georgia Tech graduates were $1,100 above State averages.



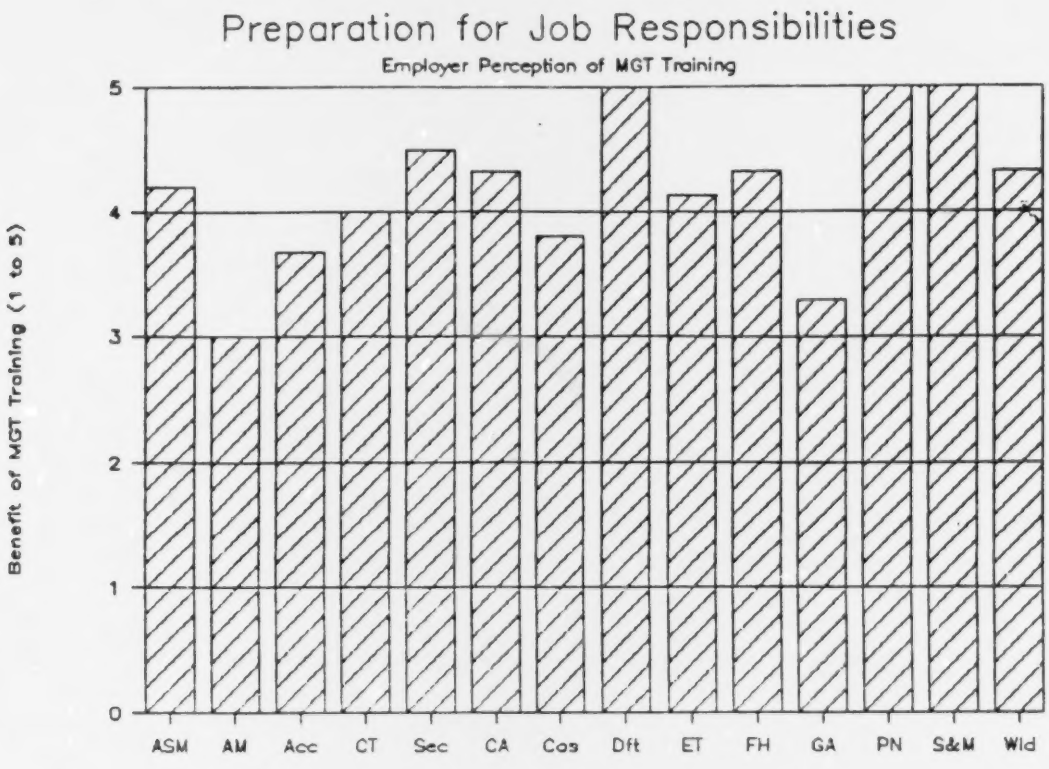
V. Employer Survey Results

Middle Georgia area employers were surveyed, both as a part of the Georgia Evaluation Model process and by the Middle Georgia Area Planning and Development Commission during the preparation of this report, to determine their perceptions of Middle Georgia Tech graduates as employees and to ascertain the anticipated change in their vocational or technical training needs during the next five to ten years.

G.E.M. Survey Results

The Georgia Evaluation Model survey asked employers to rate a number of general personal attributes for employed Middle Georgia Tech graduates, as well as specific job related knowledge categories. Personal attributes evaluated were; willingness to accept responsibility, initiative, willingness to learn, cooperation with coworkers, cooperation with management, compliance with rules and policies, work habits and attitudes, punctuality, attendance, and promotability. Specific job related areas evaluated were; job related technical knowledge, mathematical skills, communication skills, organizational ability, ability to operate equipment, and work quality. Employers were also asked to evaluate the overall extent to which the education provided by Middle Georgia Tech had prepared the student for employment in relationship to employees who had not received vocational or technical training

Employer responses were generally favorable, although some



programs were not perceived to be adequate in all areas. Total program averages in the personal areas were relatively high, with seven of ten being rated over 4.00 on a 1.00 to 5.00 scale. Initiative (3.97), work habits (3.95), and promotability (3.94) were the weakest areas. The specific job related areas were evaluated less favorably by the employers. Of the seven areas rated, six averaged less than 4.00, with operation of equipment being given the best score (4.27). Organizational ability (3.86), math skills (3.88), and job related technical knowledge (3.90) were the lowest rated areas.

Of the individual programs, Practical Nursing, Secretarial, Clerk Typist, and Welding received the highest scores from

TABLE 3

Student and Employer Responses - G.E.M. Report

Program:	# of Students Responding			Average Response	
	In Field	Out of Field	Un-employed	General (Personal) Areas	Skill Areas
Aircraft Sheet Metal	6	0	1	4.09	3.91
Employer Response				4.29	3.91
Auto Mechanics	3	3	5	4.41	4.55
Employer Response				3.67	3.56
Accounting	5	2	8	4.21	4.28
Employer Response				3.93	3.73
Clerk Typist	6	0	4	4.63	4.7
Employer Response				4.47	4.5
Secretarial	6	1	0	4.54	4.31
Employer Response				4.56	4.14
Conditioned Air	3	4	0	4.19	4.37
Employer Response				4.5	3.94
Cosmetology	13	0	5	4.15	4.27
Employer Response				4.1	4.34
Drafting	7	0	0	4.08	4.34
Employer Response				4.51	3.88
Electronics Technology	32	2	2	4.48	4.42
Employer Response				4.41	4.17
Food Hospitality	6	0	1	4.43	4.46
Employer Response				3.85	4.03
Graphic Arts	4	0	4	3.91	4.03
Employer Response				3.1	2.89
Practical Nursing	6	1	4	4	3.96
Employer Response				4.65	4.43
Sales & Marketing	6	1	3	4	4.04
Employer Response				4.03	4.11
Welding	4	3	2	4.55	4.74
Employer Response				4.37	4
Total	107	17	39		
Percent	65.64%	10.43%	23.93%		

employers. Graphic Arts, Auto Mechanics, Accounting, and Food Hospitality were evaluated least favorably. Employer perceptions of the Graphic Arts and Auto Mechanics programs were especially negative; neither program received an average score higher than 3.56 in any area and the Graphic Arts program received a very poor rating in specific job related areas (2.65). Students employed from the Auto Mechanics program were perceived by employers to be no better prepared than employees who had received no technical training (3.00).

Comments and suggestions were also solicited from employers for improving Vocational/Technical and personal skill areas. The employer recommendations generally reflected the results of the scaled evaluations. Employers of students from specific programs made recommendations concerning equipment and techniques.

Middle Georgia APDC Survey Results

From a list of businesses and industries known to have hired Middle Georgia Tech graduates which the Institute provided, the Middle Georgia Area Planning and Development commission surveyed 51 area employers who had hired Middle Georgia Tech graduates from 12 instructional programs. The areas surveyed were; Aircraft Sheet Metal (4 employers), Auto Mechanics (2 employers), Business Education (10 employers), Conditioned Air (2 employers), Cosmetology (6 employers), Drafting (5 employers), Electronics (8 employers), Food Hospitality (3 employers), Graphic Arts (2 employers), Practical Nursing (3 employers), Sales and Marketing

(3 employers), and Welding (3 employe[illegible]).

The survey was designed to determine both the general level of satisfaction with the job performance of Middle Georgia Tech students and the level of each employer's anticipated need for employees with vocational or technical training in the next five to ten years. Employers were asked to anticipate changes in their level of business activity and employee requirements, as well as suggesting ways in which Middle Georgia Tech could be more responsive to their training needs.

Due to the nature of the available sample size, statistical validity cannot be claimed for survey results. The number of employers contacted in individual program areas may not be sufficient to insure a proper representation of the attitudes and opinions of the local business community towards the services provided by Middle Georgia Tech. In addition, negative survey responses may result from poor individual student performance which is not representative of general student quality. However, the survey does provide general insight into anticipated business trends and expected training requirements for the broad spectrum of area businesses and industries.

Employers were asked to rate the general job performance of Middle Georgia Tech graduates on a scale of one to five, with five being the highest. The average response of all employers was 3.9 (see Table 4). Average ratings by program area ranged from a low of 2.75 for Drafting, to a high of 4.66 for Practical Nursing. Eight of twelve programs received a rating of 4.00 or

better, and only one program (Drafting) received a score less than 3.00.

Employers were similarly asked to anticipate changes in their business activity in the next five to ten years. Employers responded on a one to five scale, with one representing an anticipated significant decrease in business activity and five representing an anticipated significant increase in business activity. The average for all employers was 3.95. Responses ranged from a high of 5.00 for Electronics employers, to a low of 3.00 for Graphic Arts employers. Employer responses in six of twelve program areas averaged better than 4.00, while no response lower than 3.00 was reported.

Employers were also asked to evaluate any anticipated change in their need for employees with vocational or technical training, using the same scale utilized to assess anticipated change in business activity. The average response for all employers was 4.08. Responses ranged from a high of 4.75 for Electronics employers, to a low of 3.00 for Graphic Arts employers. Eight of twelve program areas averaged better than 4.00, while no response lower than 3.00 was reported.

Employer suggestions for improving or expanding educational programs echo many of those found in the G.E.M. report. Employers were most concerned about providing students some practical job experience prior to graduation. Employers also felt that the program curriculums often failed to reflect recent changes in technologies and equipment which were important to adequate job

performance. Other common concerns were lack of professionalism, poor English skills, and more concern with safety on the job.

TABLE 4

Middle Georgia APDC Employer Survey

Program Area	# of Responses	Average MGT Graduate Performance Rating	Anticipated Business Trend	Anticipated Training Needs
Aircraft Sheet Metal	4	4.25	3.75	4.75
Auto Mechanics	2	3.00	4.00	3.50
Business Education	10	4.10	3.80	4.60
Conditioned Air	2	4.00	4.00	4.00
Cosmetology	6	3.83	3.50	4.33
Drafting	5	2.75	4.40	4.00
Electronics	8	4.50	5.00	4.75
Food Hospitality	3	4.00	3.66	3.66
Graphic Arts	2	3.00	3.00	3.00
Practical Nursing	3	4.66	4.66	4.66
Sales and Marketing	3	4.44	4.00	4.00
Welding	3	4.33	3.66	3.66
Total (Average)	51	3.90	3.95	4.08

VI. Analysis of Perspective Student Population and Training Needs

The determination of the perspective future student population and quantification of future need for vocational and technical education in the Middle Georgia area depend upon analysis of two primary areas; population change and economic growth. Analysis of population change by age components provides information about the pool of potential students at a given point in the future; the larger the pool of potential students, the greater the probability that an increased number will seek vocational or technical education. The analysis of economic growth potential gives indication of probable future demand for skilled workers; any change in the number of available skilled positions will affect the probability that members of the population will seek vocational or technical training.

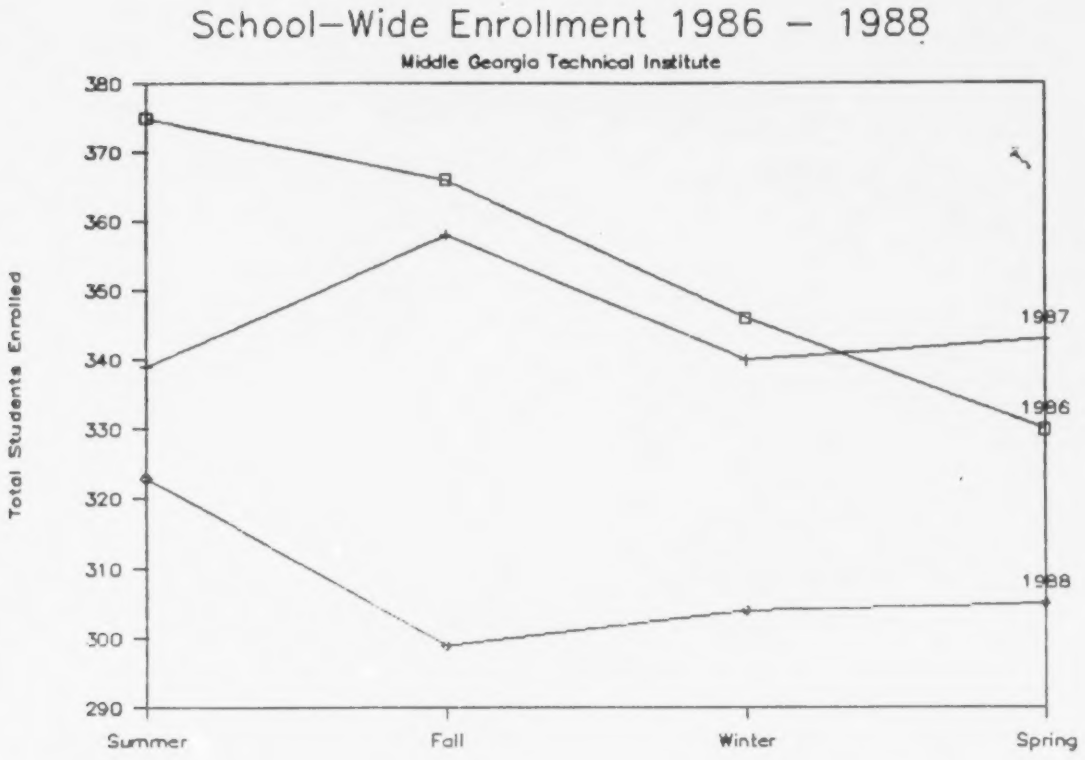
A. Analysis of Demographic Factors

Population change in the four-county Middle Georgia Tech service area is anticipated to be substantial between the present and the year 2000. Over 26,000 persons are anticipated to be added to the total service area population over the next eleven years. Of these, 19,000 will be between the ages of 15 and 34. These increases will bring the total of persons in this age group to 34,546. Since 76.1 percent of Middle Georgia Tech's enrollment falls into these age categories, if it is assumed that the area economy remains strong, demand for Vocational/Technical training can be expected to rise based solely on these numbers. Almost a

quarter of Middle Georgia Tech's enrollment (23.9%) comes from persons over age 34, and this age group will also show significant growth. Many of these persons will be seeking additional training as the work place adopts new technologies and many will also be seeking retraining from noncompetitive industrial occupations.

A more detailed breakdown of expected population growth shows an additional 6011 persons between the ages of 20 and 24 in the Middle Georgia Tech service area by the year 2000. This age group represents 38.6 percent of total student enrollment. Another 5453 persons are anticipated to be added to the service area population in the 25 to 29 age group, which represents 17.6 percent of student enrollment. In the 30 to 34 age group, 3631 additional residents are expected. This age group comprises 14 percent of total enrollment.

These figures indicate that the largest growth in service area population is expected to be in those age groups which represent the largest percentage of current student enrollment. If only one percent of the new residents in these age groups require vocational or technical training, an annual average of 150 additional students would need to be served by the year 2000, a nearly 30 percent increase over current enrollment. However, if high school students continue to seek Vocational/Technical education upon graduation at the current rate of slightly over ten percent, the percentage of the total additional population requiring vocational or technical training in any one year could



(Note: Lower enrollment figures for 1988 reflect the elimination of certain program areas from the MGT curriculum.)

be substantially higher than one percent.

Larger percentages of persons already in the work force will also likely seek vocational or technical training in the future. The demand for purely unskilled labor has shown a marked decline in the last decade and that trend should continue. Increased mechanization of the business and manufacturing environment require new entrants to the job market to have more technical skills than were previously necessary. Many industries which have

previously employed large numbers of persons in relatively unskilled positions, such as textiles manufacture, have reduced employment or upgraded the technological sophistication of production in order to remain competitive. Changes in the American social structure have also necessitated the entrance of many older persons, especially women, into the labor force. This trend is also likely to continue.

The percentage of Middle Georgia Tech's enrollment represented by persons 35 years and older should increase in the coming decade. Currently, slightly less than 25 percent of the student body is comprised of persons in this age group. The factors previously cited should promote additional demand from this sector of the population significantly beyond their absolute growth in numbers. While this age group is expected to add 11,000 persons to the service area population by the year 2000, the level of demand among persons 35 and older currently residing in the four-county area can also be expected to increase.

Economic factors also indicate the probability of strong future demand for vocational and technical education. Current income and employment conditions in the Middle Georgia Tech service area are indicative of both a significant supply of untrained workers and an increasing demand for employees in skilled positions.

Per capita income figures for the four-county area show a generally typical pattern for rural and semi-urban areas. Houston County, as the service area's most urbanized county, has per

capita income averages most representative of the State as a whole. Peach County continues to show significant income growth as more persons employed in the adjacent urban areas migrate into the County. These additional residents also stimulate indigenous demand for services in the County, which exert upward pressure on local wages. Since Dooly and Pulaski counties have yet to experience significant population growth, economic development has been marginal and both counties remain typical of rural Georgia in terms of per capita income averages.

Since Peach, Dooly, and Pulaski counties still remain primarily rural, educational attainment also remains lower than State averages. This provides large numbers of relatively unskilled workers who would otherwise seek employment in Houston County's expanding aerospace and service support industries if they were properly trained. Unemployment figures for the four-county service area show higher percentages of workers unable to find suitable employment than is average for the State. This results from the combination of both lower educational attainment and marginal economic development. However, rapid population growth and economic development in Peach and Houston counties will likely result in an increased demand for vocational or technical training among current residents of Peach, Dooly, and Pulaski counties.

B. Employer Surveys Results

A survey of 51 area employers conducted in November 1988 by

the Middle Georgia Area Planning and Development Commission (see Table 4) indicates an increased need for trained employees in almost every program field currently available at Middle Georgia Tech.

The average employer response when asked to anticipate the extent to which their business would increase in the future was 3.95 on a one to five scale. Of the employers in the twelve areas surveyed, none anticipated that their business would decrease in the future and employers in only one program area anticipated that it would remain the same.

While the responses themselves are encouraging, it is important to note that businessmen are generally conservative by nature and tend to be cautious in assessing any potential for expansion. Although local business trends are dependent to a large extent on the condition of the State and national economies, many businesses and industries employing Middle Georgia Tech students from certain program areas have experienced significant growth in the past decade. Also, surveys of currently existing businesses cannot anticipate additional business and industrial locations to the Middle Georgia Tech service area.

Employer responses to questions concerning the anticipated future need for employees with vocational or technical training also indicate significant increases. The average employer response for the anticipated training needs trend was 4.08 on a one to five scale. No employers anticipated a decrease in the need for trained workers, while employers from only one program

area anticipated that requirements would remain the same.

The average response of the employers' to the anticipated need for vocationally or technically trained employees was slightly higher than their average response to the anticipated business trend. This may indicate that employers are not only expecting the level of business activity to increase, but are also anticipating that the nature of their employee requirements will be more skill oriented in the future.

C. Specific Needs Evaluation

The quantification of need for individual skills is a complicated task. Demand for specific vocational and technical training programs depends on a number of variables, many of which are difficult to quantify at a distance in time. Population growth, general economic conditions, changes in educational patterns, wage structures in business and industry, and convenience of Vocational/Technical training opportunity all affect potential student demand.

In the Middle Georgia Tech service area, anticipated conditions are strongly indicative of increased demand for vocational and technical education. Population growth is expected to be substantial throughout the coming decade, and beyond. The area economy is more diverse and fundamentally sound than at any previous time, and is anticipated to continue the expansion of it's "high-tech" sector. The demand for additional services brought about by steady population growth, as well as the high

wage structures associated with this demand, will provide increasing incentive for area residents to seek skill training. The increasing costs associated with college education will also make vocational or technical training a more financially attractive alternative for many area residents.

Future demand in individual program areas will depend largely on the relationship of each program to the level of general economic growth. It is probable that non-technical skill areas will only require enough additional workers to meet the incremental demand resulting from population growth. Significant expansion of service related industries beyond natural market demand is unlikely. Therefore, the percentage of additional trained workers needed in non-technical, service related industries should be roughly equivalent to the percentage growth in the population, with allowance for additional demand resulting from any increase in area per capita income averages.

The demand for technically trained employees to work in manufacturing and manufacturing support industries will depend more specifically on the long-term health of these industries as well as the rate at which these industries locate to the Middle Georgia area. There has been substantial recent expansion of precision manufacturing industries in Houston, Bibb, and Peach counties. This trend is expected to continue, with even more significant growth in this sector possible in the coming decade. Because of a number of factors, such as the presence of the Warner Robins Air Base and the general tendency of high-tech

industries to locate in clusters, it is anticipated that demand for technically skilled workers will increase at a rate substantially higher than that of general population growth. The Georgia Aerospace Technology Education Council has identified specific technical training that will be necessary if Middle Georgia's aerospace industries are to be adequately staffed by skilled workers in the coming decades. These training needs will place great demand upon the Institute's resources. Demand for business related skills should also experience more rapid growth as industries expand, requiring additional administrative personnel.

The quantification of demand for individual program areas is based upon two primary determinations; whether the program provides training for technical/industrial skills or general service skills, and whether the program provides trained workers to identified high-growth sectors of the area economy. Based upon these considerations, the results of employer surveys, and the analysis of service area demographics, the following anticipated percent changes in demand have been forecasted for each program area through the year 2000:

1) Aircraft Sheet Metal: 25 to 35 percent increase.
2) Auto Mechanics: 20 to 25 percent increase.
3) Business Education: 35 to 45 percent increase.
4) Conditioned Air: 20 to 25 percent increase.
5) Cosmetology: 20 to 25 percent increase.
6) Drafting: 25 to 30 percent increase.

7) Electronics: 40 to 50 percent increase.

8) Food Hospitality: 20 to 25 percent increase.

9) Graphic Arts: 20 to 25 percent increase.

10) Practical Nursing: 40 to 50 percent increase.

11) Sales and Marketing: 25 to 30 percent increase.

12) Welding: 30 to 35 percent increase.

These figures represent the percent of additional students, beyond those currently enrolled or on waiting lists, who would need to be provided with vocational or technical training. Based on current enrollment figures, these demand increases would require Middle Georgia Tech to provide training to an additional 200 students annually by the year 2000, an increase of over 35 percent of current enrollment.

The anticipated population increase in the Middle Georgia Tech service area between 1988 and the year 2000 is 19.6 percent. These forecasted demand increases were made allowing primarily for population increase, with slight additional demand based on rising wages. If the area economy does not experience recession or unusually high unemployment, these forecasts should prove to be generally accurate. However, if economic growth and industrial locations to the Middle Georgia Area continue at their present pace, the demand for vocational and technical training be as much as 50 to 60 percent higher.

In addition to the twelve full-time day program areas, the demand for continuing education and economic development activities may also be expected to increase. Quantification of

demand for these services depends heavily upon how well they are marketed by the institute and what other agencies may chose to provide similar services in the Middle Georgia area.

Economic development activities are of prime importance to the health of the local economy. It has been primarily through the actions of local government and economic development agencies that the many new high-tech industries have been attracted to the Middle Georgia Tech service area. The Middle Georgia Technical Institute is in the unique position of being able to provide essential technical training directly to new industries which is designed to meet individual needs.

Demand for industrial development activities, such as the Quick Start program, will depend on how well the services are marketed to prospective industrial clients, but it is probable that the level of demand will relate directly to the ability of the Institute to provide such services. Individualized skill training directed at allowing employers to rapidly meet employee requirements will be a powerful incentive for industrial relocations and expansions within the service area. It is likely that the commitment of significant additional resources to these activities will be necessary in order to expand program capacities and flexibility; however, this investment will provide the Middle Georgia area a considerable advantage over similar areas competing for high-tech jobs. A detailed analysis of program capabilities and requirements will be necessary in order to determine the level of resources adequate for efficient

implementation.

The demand for continuing education programs and other non-traditional adult educational opportunity is likely to increase sharply. Many area employees are already finding it necessary to update computer and business related skills. Much of this demand is currently being met by other educational institutions such as Macon College and Crandall Junior College in Macon. However, these facilities are not conveniently located for many Middle Georgia Tech service area residents, as well as being generally more expensive to attend than Middle Georgia Tech.

Demand for the updating of technical skills in areas such as electronics and aerospace related fields will also experience significant increases as further technological developments occur. It will be necessary for the Institute to provide training in these areas at times and locations convenient to persons already having full-time employment. Demand for these services may be more accurately determined in consultation with existing businesses and industries in the service area.

Adult basic education activities will also need to be expanded. Adult literacy programs will play a key role in allowing the educationally disadvantaged to become more employable. Currently, one-third of Middle Georgia Tech service area residents could benefit from some form of literacy improvement training. There is an obvious shortfall in the provision of these services in the Middle Georgia area. Current programs, such as Project Read, reach less than one-tenth of

those persons requiring literacy training. Proper marketing and the commitment of additional resources could yield as much as a 500 percent increase the number of persons desiring such training.

Other adult basic education activities, such as remedial training in Math and English skills, will become more necessary as the availability unskilled, non-technical jobs decreases. Current efforts of local educational facilities to meet the demand for these services are inadequate. The Institute has the opportunity to play an important role in these areas if additional resources are provided and such services are properly marketed.

VII. Analysis of Current Middle Georgia Tech Curriculum

The Middle Georgia Tech Curriculum is comprised of fifteen separate programs in twelve program areas. These programs, in combination with employer provided training and previous job experience, are the only source of skilled workers available to employers in the Middle Georgia area. While Middle Georgia Tech has made substantial efforts to cooperate with area businesses and industries in meeting training needs as they arise, there remain a number of areas in which the Institute fails to meet current demand.

A. Analysis of Current Programs

A program by program analysis of the current Middle Georgia Tech curriculum follows:

Aircraft Sheet Metal: The primary shortcomings of the ASM program lie in insufficient program capacity and the failure to provide sufficiently up-to-date technical knowledge. During the first three months of the 1988-89 school year, an average of 27 students were on waiting lists for program prerequisite courses. An average of 11 additional students were on waiting lists for program entry or re-entry.

The results of employer surveys indicate that technical skills such as computer numerical controlled machining operations and other specific aerospace related knowledge were not sufficiently up to date, or not provided at all. Insufficient

practical experience also remains a primary concern of employers despite the Institute's recent efforts to upgrade program standards through the addition of individual project requirements.

Suggested remedial actions for the ASM program include: the hiring of at least one additional full-time instructor, greater contact with area ASM employers to keep apprised of future technical requirements, modernization of instructional tools and equipment, and the provision of greater experience in a realistic work environment, perhaps through internship requirements.

Auto Mechanics: The Auto Mechanics program is one of the Institute's lowest rated. Despite recent efforts to upgrade program standards through the acquisition of new equipment, employers still uniformly report that students are inadequately prepared to perform normal duties and are unfamiliar with recent technological developments in the field. Employers also express concern over the inadequate practical experience of program graduates.

Suggested remedial actions for the Auto Mechanics program include: the hiring of instructors with a greater experience in electronic diagnostics, more detailed attention to non-engine maintenance such as electrical, air conditioning, and transmission systems, the provision of greater opportunity for "hands on" experience during training, and the purchase of additional equipment, as needed.

Business Education: The Business education programs (Accounting, Clerk Typist, and Secretarial) received generally favorable responses from employers. However, insufficient program capacity, outdated equipment, and the lack of sufficient training in computer related skills are major areas of concern.

During the first three months of the 1988-89 school year, an average of 26 students were on waiting lists for entry into one of the three Business Education programs. Employers expressed concern over the lack of experience with computer accounting software and limited knowledge of different word-processing programs. Professional skills such as personal appearance and communications ability were also employer concerns.

Suggested remedial actions for the Business Education programs include: the hiring of additional instructors, especially with greater knowledge of office automation techniques, the purchase of additional computer equipment, the provision of experience with a number of different word-processing and spreadsheet software programs, and greater emphasis in the curriculum of professional skills.

Conditioned Air: The Conditioned Air program received generally favorable reviews from employers, although it was felt that the program curriculum was not keeping pace with current developments in the field and that more up-to-date equipment was needed.

Suggested remedial actions for the Conditioned Air program

include: requiring instructors to do a better job of remaining current with technological developments in the field, and the purchase of additional modern equipment.

Cosmetology: Major shortcomings in the Cosmetology program are the lack of program capacity, inadequate opportunity for practical experience, and the failure to keep pace with current trends in the beauty industry.

During the first three months of the 1988-89 school year, an average of 18 students were on waiting lists for admission to the program. Employers expressed concern over the lack of adequate "hands on" experience provided by the program curriculum. Employers also felt students were not sufficiently experienced in utilization of necessary equipment and that students were not kept current with trends in the industry, which they felt was essential to success in an industry that relies so heavily upon current fashions.

Suggested remedial actions for the Cosmetology program include: the purchase of additional modern equipment, the continuation and expansion of seminar and workshops, perhaps with the assistance of the local industry, more attention to the problems associated with ethnic hairstyles, and the provision of increased opportunity for practical work experience in the context of the program.

Drafting: Employers are generally unsatisfied with the quality of job performance of students from this program. Reasons cited include inadequate practical experience and insufficient education in computer related skills. Program capacity is also slightly inadequate.

During the first three months of the 1988-89 school year, an average of eight students were on waiting lists for admission to the program. Employers expressed concern over some students' lack of understanding of working drawings, lack of knowledge of land surveying techniques, and unfamiliarity with computer assisted drawing (CAD) software. Employers uniformly felt that more practical experience should be required by graduation form the program.

Suggested remedial actions for the Drafting program include: a greater emphasis on computer assisted drawing techniques and the purchase of computer equipment as required, the inclusion of some instruction in surveying techniques, increased emphasis on the production of working drawings, and the provision of greater opportunity for practical experience in the program context.

Electronic Technology: The major problems associated with the electronics technology program are inadequate program capacity and insufficient specialized instruction. Responses to employer surveys are very positive for this program.

During the first three months of the 1988-89 school year, an average of 25 students were on waiting lists for pre-requisite

courses. An average additional nine students were on waiting lists for entry or re-entry into the program.

Individual employers expressed concern over the lack of specialized training available to program students, such as optical technology, manufacturing production control, and data transmission technology.

Suggested remedial actions for the Electronics Technology program include: hiring additional instructors, especially with knowledge in specialized areas, and greater contact with area employers to determine which specialized skills are in greatest demand.

Food Hospitality: The Food Hospitality program is generally adequate. Employers express few concerns with the quality of student job performance.

Suggested remedial actions for the Food Hospitality program include: the provision of the opportunity for greater practical experience in the course of instruction.

Graphic Arts: The Graphic Arts program is judged to be generally inadequate by employers. The primary reason appears to be that students are simply inadequately prepared in both general and specific knowledge areas.

Suggested remedial actions for the Graphic Arts program include: attempting to find reliable, full-time instructors who will provide consistency to the program curriculum, extending the

length of the program to allow for more detailed instruction in all areas, the provision of more practical experience in the program context, and greater contact with area employers to assess specific needs.

Practical Nursing: The Practical Nursing program is very favorably evaluated by employers, but suffers from very limited program capacity.

During the first three months of the 1988-89 school year, an average of 51 students were on waiting lists for admission to the program. Employers indicate a strong demand for program graduates into the foreseeable future. Employers expressed concern that students receive at least some training in clerical and computer related skills and that written communication be stressed.

Suggested remedial actions for the Practical Nursing program include: the hiring of additional instructors to assist in meeting program demand, inclusion of some business skills training in the curriculum.

Sales and Marketing: Students from the sales and marketing program were generally well evaluated by employers. There appear to be no significant problems associated with this program.

Suggested remedial actions for the Sales and Marketing program include: greater instruction in the practical psychology of sales, and additional instruction in market research

techniques.

Welding: The welding program appears to suffer from no major deficiencies.

Suggested remedial actions for the Welding program include: inclusion of some instruction in x-ray analysis of structural weld integrity.

B. Suggested Program Additions

In addition to modifications required of existing programs, the establishment of certain additional programs may be necessary to meet area demand for Vocational/Technical training. Results of employer surveys, as well as general business trends, indicate the necessity for the availability of training in certain areas.

The greatest un-met need for technical training is in the area of computer operation and maintenance. Almost every employer surveyed expressed the desire that students receive more education in computer related fields. The utilization of so many computers in area businesses and industries indicates the need for a large number of computer operators, programmers, and repair personnel. Currently, the availability of such training is limited to area colleges and universities.

Although the start-up costs associated with computer training programs are high, such programs would allow area residents to take advantage of generally high-wage jobs while reducing the financial investment necessary to obtain the needed

skills. Feasibility studies and cost benefit analysis of programs in this area are strongly recommended.

Additional aerospace oriented training should also be considered. The Georgia Aerospace Technology Education Council has identified technical training areas of concern to local aerospace industries and has actively pursued both public and private funding for aerospace curriculum development in the Middle Georgia area. The Institute should cooperate fully attempting to implement the suggested curriculum. Non-sheet metal and other machining operation skills are important to the area economy. Specialized training in radar and communications electronics should also be considered. Health technology occupations, such as laboratory technician, are in high demand and could be instituted in conjunction with existing medical technology programs.

Additional adult basic education programs should be provided, especially in the areas of literacy and basic Math and English skills. Employers consistently observe that employees are deficient in these fundamental areas. These programs should be offered both in conjunction with existing vocational and technical programs and as an independent curriculum.

The Institute should maintain constant contact with area business interests and be conscious of opportunities to provide for un-met training needs. Continued study of the area economy to identify shortages of trained personnel, and to determine the resources necessary to both short and long-term

solutions for employer training needs, is also strongly recommended.

VIII. Analysis of Middle Georgia Tech Physical and Human Resources

The Middle Georgia Technical Institute is presently at or near capacity for available faculty in every program area. Utilization of the physical plant is one-hundred percent during day classes and approximately 50 percent during evening class hours (see Chart 1). Resources available for expansion of existing programs or the addition of new programs are very limited.

During the first three months of the 1988-89 school year, a total average of 195 students were on waiting lists for pre-requisite classes or program entry in all program areas. Students on waiting lists represented 34 percent of total school enrollment for the 1988 school year.

In light of the recommended program expansions and additions, and in consideration of anticipated long-term demand for Vocational/Technical training, it is imperative that Middle Georgia Tech begin now to seek solutions to future staffing and physical space requirements.

A. Human Resources

Meeting the need for adequate classroom instructors and other educational support personnel is largely dependent upon the availability of sufficient funding. In some program areas, such as Aircraft Sheet Metal, Business Education, Cosmetology, Electronics Technology, and Practical Nursing, it is already

necessary to hire additional instructors. Other program areas, such as Graphics Arts, may find it necessary to increase salaries in order to attract qualified instructors who will remain long enough to provide stability to the instructional program.

Current commitments to economic development efforts and continuing education programs are also inadequate. Staffing for these efforts do not allow the Institute to provide the level of service necessary to meet existing demand. Future demand for these activities will likely increase at a rate greater than that for the more traditional vocational and technical programs and the emphasis on providing additional faculty for these efforts should reflect this proportionately.

The rate at which additional instructors will be required for each program area depends on both the rate of increase in program demand and the limit of the Institute's ability to provide adequate instruction with existing human resources. In some program areas it may be possible to increase class size without significant detriment to educational quality. However, insufficient individual attention is a common criticism leveled at Middle Georgia Tech programs in the G.E.M. Report student follow-ups. It is not recommended that the Institute attempt to address instructor shortages by adopting higher student/teacher ratios.

Although increases in demand for individual programs will bear a generally linear relationship to population growth, programs such as Electronics Technology and Aircraft Sheet Metal

may experience peak demand periods due to industrial locations to the Middle Georgia area. Demand peaks of this nature are difficult to anticipate and are almost impossible to handle when no incremental capacity is available within acceptable student/teacher ratios. It is important that the Institute allow for flexibility in responding to rapid increases in demand by maintaining staffing levels above absolute minimum requirements.

In addition, the Institutional and General Standards which the State will impose on Middle Georgia Tech beginning in calendar year 1989 will significantly affect utilization of human resources. The new standards will necessitate a core curriculum in each program area consisting of English, Mathematics, and Psychology. In many programs, micro-computer classes will also be required. Since these requirements are in addition to any presently existing faculty utilization, an unspecified number of new faculty will have to be hired to meet these additional requirements.

Estimates for instructor requirements in individual program areas have been made on the basis of present waiting lists and anticipated levels of demand. The methodology utilized involves plotting student increases based on the previously determined anticipated demand increase for each program area and suggesting the addition of one instructor each time the program area reaches 125 percent of capacity at current student/instructor ratios. In some cases, the necessity to provide expertise of a specific nature, or to respond to rapid changes in skill requirements, may

require unanticipated faculty additions. Additional instructors may also be necessitated by scheduling and other curriculum changes required by the imposition of new instructional and general standards by the State of Georgia Department of Adult and Technical Education. These changes will have the effect of increasing faculty requirements above those anticipated by demographic and economic factors. The following list provides a general time frame for program instructor requirements:

Aircraft Sheet Metal: One instructor presently needed.

Auto Mechanics: One additional instructor in 3 to 5 years.

Business Education: One instructor presently needed.

Conditioned Air: One additional instructor in 4 to 6 years.

Cosmetology: One instructor presently needed.

Drafting: One additional instructor in 2 to 4 years.

Electronics Technology: 1.5 additional instructors presently needed.

Food Service: One additional instructor in 5 to 7 years.

Graphics Arts: One additional instructor in 5 to 7 years.

Practical Nursing: Two instructors presently needed.

Sales and Marketing: One additional instructor in 6 to 8 years.

Welding: One additional instructor in 4 to 6 years.

Requirements for continuing education programs and economic development activities cannot be determined on the basis of the

data available for this study; however, these activities are anticipated to demand a growth in resource commitment significantly higher than traditional programs. Adult literacy and basic education programs generally rely heavily upon low student/teacher ratios and increased responsibilities in these areas will necessitate even greater expansion of current faculty. Proper staffing of economic development activities will be essential to maximum utilization of the potential of these programs and will require further additional faculty resources. Further assessment of need in these areas is strongly recommended.

Additional administrative support personnel positions will also be necessitated by increased student enrollment. Incremental workloads should allow the Institute to maintain an average of 2.5 to 3.5 per one-hundred additional students. However, the number of additional administrative personnel will depend greatly on the expansion or addition of student and community services such as job placement, marketing, and community liaison efforts.

B. Physical Resources

Middle Georgia Tech will experience increased demand for physical space from many sources. Additional demand for individual programs will increase demand for classroom space. The new Institutional and General Standards will create the necessity for a whole new set of core classes which will require additional space. Increased economic development activities and

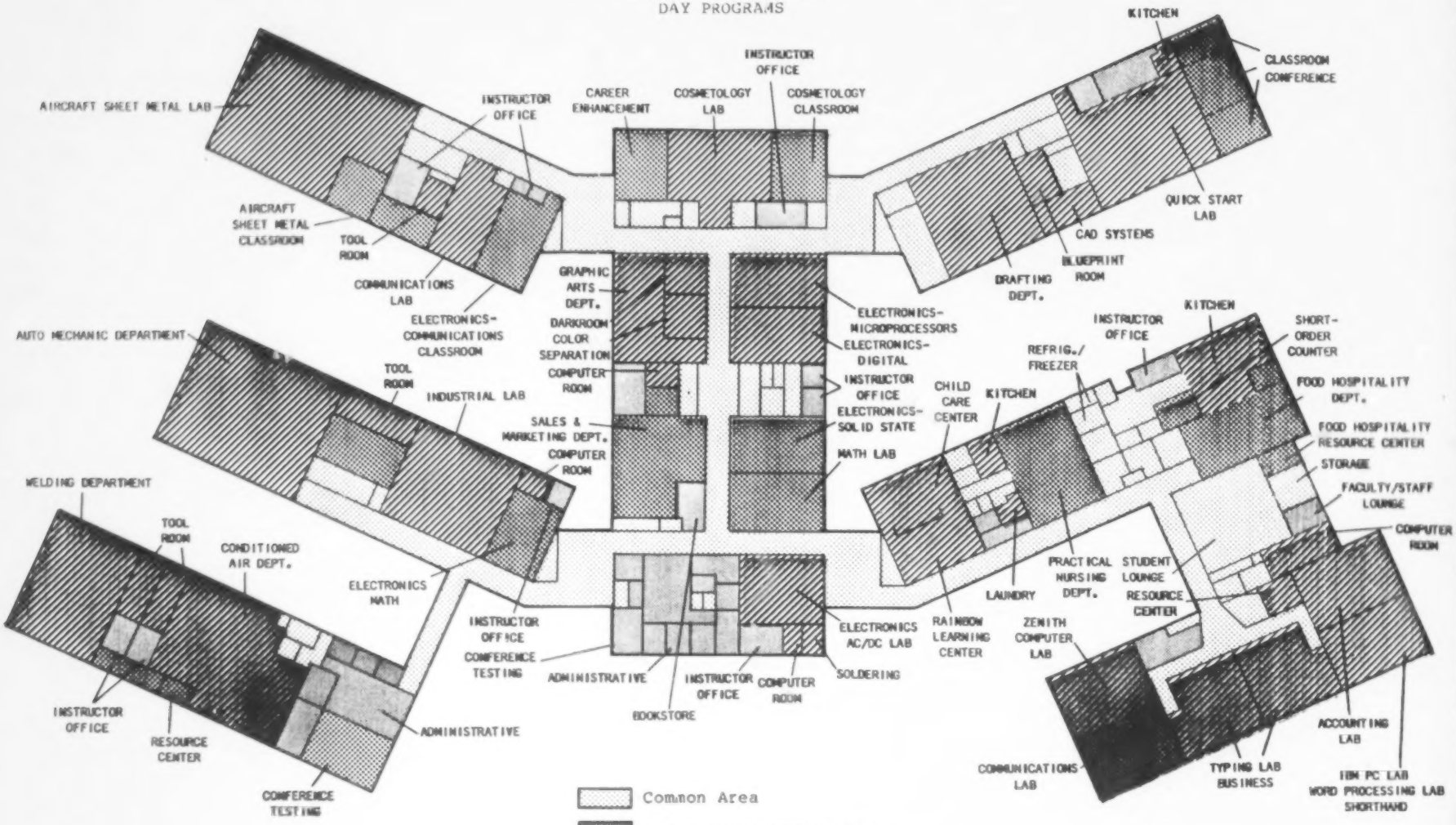
additional administrative workloads will also significantly affect the availability of adequate physical space. Current classroom and administrative space utilization rates allow few options for use of the present facility. These are basically limited to attempting to increase classroom utilization through additional evening and weekend schedules or the conversion of present administrative or common space to classroom use.

Increased evening class schedules may provide some very short-term relief for classroom space needs. However, limited equipment will still restrict the absolute number of students able to receive instruction on any given day. All classrooms are not compatible with instruction in every program area. Somewhat ironically, programs which experience the greatest demand, like Practical Nursing and Electronics Technology, would be limited to lecture components outside of lab facilities. It would also be difficult to find instructors willing to teach evening or weekend classes, and few students would be willing to attend class on the weekend.

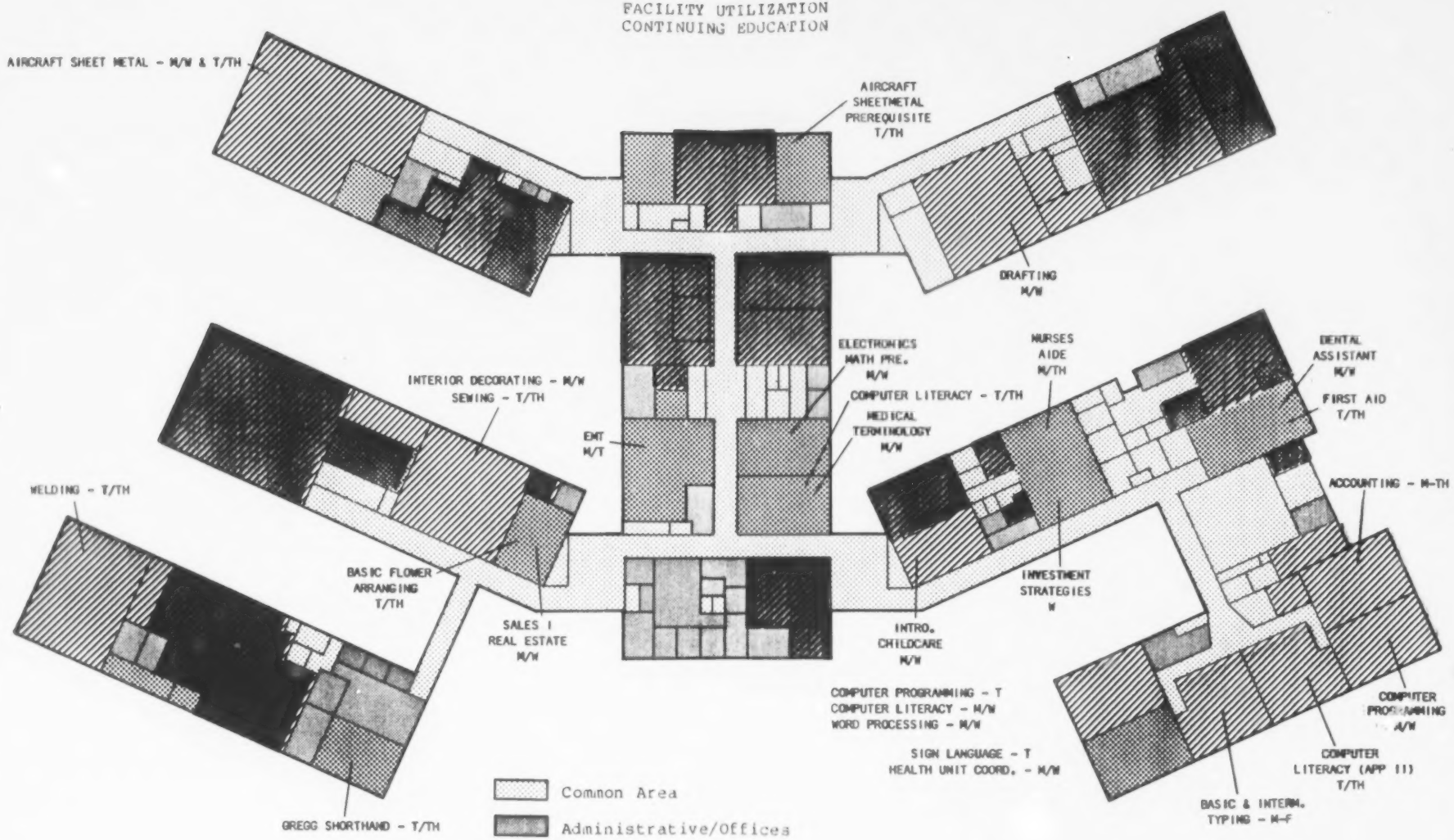
The utilization of present administrative and common facilities is not a viable option. Demands for administrative space will increase proportional to student enrollment and the structural design of the physical plant does not allow for the use of storage or maintenance areas in adequate capacity.

Since the present physical plant does not appear to be adequate for anticipated future space requirements, two options are available: expansion of the present facility, or relocation

FACILITY UTILIZATION
DAY PROGRAMS



FACILITY UTILIZATION
CONTINUING EDUCATION



of the facility to an existing or newly constructed building.

Expansion of the present facility is contingent upon the availability of additional land area at the present site. The current site size of 11.5 acres would allow for marginal expansion of existing facilities without acquisition of additional property. However, based on future demand estimates, with an inclusion of space requirements to accommodate necessary additional equipment, the Institute will need a minimum of 50 percent more classroom area by the year 2000, with a 10 to 15 percent increase in administrative space utilization. These requirements would be difficult to meet without the acquisition of additional adjacent property.

One available option would be to increase the ratio of floor area to site size by constructing a multi-story building at the present site. The feasibility of this option should be studied, although it is unlikely that such a structure could be erected without unacceptable disruption of current operations.

The lead time necessary to budget, plan, and construct additions to the existing buildings make it unadvisable to limit facility increases to minimum estimated requirements. Any construction with a 20 to 30 year life-cycle would become over utilized before amortizing the capital costs associated with construction. The optimum solution involves the construction of sufficient facilities to allow for need oriented program expansion within the ten year time horizon, while retaining sufficient land area to accommodate new construction as needed.

The most economical way to achieve this level of flexibility would be to acquire additional property at the present site. If adjacent property cannot be acquired it would then be necessary to relocate to a site which would provide sufficient land area to allow incremental expansion of the physical plant as increases in demand for vocational and technical training dictate. It is suggested that the Institute investigate the possibility of acquiring additional adjacent property with a minimum of 15 to 18 developable acres.

While incremental expansion of an existing facility is almost always less costly than relocation, the Institute may find that it is not able to obtain needed acreage at the present site, or that insufficient developable acreage remains adjacent to the present facility. Under these circumstances, the Institute would be forced to seek relocation of the present facility. Relocation options are generally limited to the purchase of an existing building or the construction of new facilities.

The availability of existing structures which could meet the Institute's physical needs and also have sufficient land area to allow for future expansion is likely quite limited, although this possibility should be investigated. The purchase of an existing structure would generally be less costly than the construction of completely new facilities.

Middle Georgia Tech has many options for relocation of the present facility. The basic requirements for the new site would be 25 to 30 acres of developable land and adequate transportation

access. Proximity to the urbanized areas of Houston County should also be a consideration, although this would tend to inflate land acquisition costs.

A relocation of present facilities could be accomplished in an incremental manner with the construction of a limited physical plant at the new location to accommodate certain programs, while operations continue at the present site. Phased construction of additional facilities, with the eventual aim of bringing all educational programs to the same campus, could then be conducted over a period of time. This option is unattractive from an administrative perspective because of the difficulties associated with providing services at two separate locations, but it may result in lower initial capital costs.

Middle Georgia Tech might also wish to consider attempting to relocate in conjunction with other educational facilities, such as the Warner Robins Air Base Residence Center, which has expressed a desire to upgrade it's physical plant. The idea of a "super campus", where educational opportunities from many sources exist in close proximity, can provide students with increased diversity and convenience. Area businesses and industries might also wish to participate in the utilization of training and conference facilities.

It is certain that it will be necessary for the Middle Georgia Technical Institute to take steps in the near future to address the shortage of classroom space. Current demand for vocational technical training already exceeds capacity, and

steady demand increases in demand for most program areas can be anticipated. Therefore, it is suggested that the Middle Georgia Technical Institute begin to assess the feasibility of remedial actions in the following order of priority:

1) The expansion of the current campus through land acquisition at the present site, or alternative construction which will allow greater utilization of the present site.

2) Incremental relocation of present operations to a new site.

3) Total relocation of current operations to a new site, possibly in association with other educational facilities.

Further delay in the evaluation of these alternatives will likely result in failure to meet present and future demand for vocational, technical, and other non-traditional educational services, resulting in a significant economic disbenefit to the Middle Georgia Community.